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AUTHOR Mantovani, Richard E.
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ABSTRACT

This analysis investigates the relationship between (1) income and expenses of medical students and (2) selected characteristics of the medical schools they attended by assessing the degree to which variations in student financing patterns are explained by differences among medical schools. The data used were derived from anonymous questionnaires completed by a representative national sample of 7,261 medical students, comprising 15 percent of the total enrollment at each of 110 medical schools. Two basic patterns emerge regarding medical student financing, each associated with a certain type of medical school. Students enrolled in private high-tuition, research-oriented schools tended to depend more on scholarships and nonrepayable funds, loans, and contributions from parents. Those attending schools which were public, low-tuition and less research-oriented depended more on funds contributed by their spouses. Data tables and analyses are presented, and the questionnaire used is included. (Author/MSE)

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STUDIES OF MEDICAL STUDENT FINANCING

Medical Student Finances and Institutional Characteristics 1974-1975

FINAL REPORT

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STUDIES OF MEDICAL STUDENT FINANCING

MEDICAL STUDENT FINANCES AND INSTITUTIONAL CHARACTERISTICS

1974 - 1975

Richard E. Mantovani

OTHER STUDIES IN THIS SERIES

Survey of How Medical Students Finance Their Education, 1974-75
Medical Student Indebtedness and Career Plans 1974-75
Medical Student Finances and Personal Characteristics, 1974-75

Division of Student Studies

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

February 1977

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EXECUTIVE SUMMARY

This is the fourth in a series of reports based on survey data collected by the Association of American Medical Colleges to find out how medical students financed their education during the 1974-75 academic year.

Purpose

The purpose of this report is to provide information which will aid both the federal government and medical schools in planning future medical student financing. In particular, this analysis investigates the relationship between (1) income and expenses of medical students and (2) selected characteristics of the medical schools they attended by assessing the degree to which variations in student financing patterns are explained by differences among medical schools.

Methodology

The data used in this study were derived from anonymous questionnaires completed by a representative national sample of 7,251 medical students. This sample included 15 percent of the total enrollment at each of the 110 medical schools participating in the survey.

From the AAMC's Institutional Profile System (IPS), medical schools were ranked and separated into quartiles according to size (number of M.D. students), research orientation, revenue or funding patterns, control (i.e., private vs. public), and tuition levels respectively. After the schools had been grouped, averages for income and expense variables were computed for the students within each quartile.

Income variables used in the analyses are the student's sources of income (e.g., federal or state government, medical schools, banks, the student's spouse, parents, relatives, and himself) and type of income (e.g., loans, scholarships, contributions). Comparisons of these income variables (as well as expense variables) were made across quartiles.

Major Findings

The major findings of the study, as they address the study's objectives, are as follows:

1. In general, institutional sources of income (i.e., loans and scholarships) accounted for 28 percent of the student's total income. The remainder came from sources such as spouse (23.8 percent), parents and relatives (15.6 percent), and the student (16.6 percent). Of those institutions providing loans and scholarships, the federal government was the most important source (providing 13.3 percent of total student income), with banks (supplying 6.4 percent) and medical schools (supplying 4.2 percent) ranking second and third, respectively.

2. Tuition constituted approximately 28 percent of total student expenses, the remainder consisting mainly of living expenses. No large between-school differences were found in the living expenses of medical students. Differences in total expenses of students resulted primarily from differences in tuition costs.

3. Greater average incomes and expenses of students were associated with those schools that (a) were strongly oriented toward research, (b) were more autonomous from public control, (c) depended to a greater extent on endowments and on funds from sponsored research, and (d) had higher tuition rates.

4. Students in schools conforming to the above description also tended to depend relatively more on institutional funds such as loans (mainly from the medical schools and from banks) and on contributions from parents.

5. Students depended relatively more on spouses' income and relatively less on parents and institutional sources if enrolled in schools that (a) were less oriented towards research, (b) were less autonomous from public control, (c) depended on revenues from tuition, state appropriations and sponsored funds designated for teaching and training, and (d) had lower tuition rates.

6. The amount of student indebtedness anticipated upon graduation was higher for schools that were more autonomous from public control and had greater tuitions. This anticipated indebtedness generally was higher for schools with a large number of undergraduate medical students and which were dependent on revenue from private endowments/gifts and sponsored research.

Conclusions

From the above findings, two basic patterns emerge regarding medical student financing, each associated with a certain type of medical school. Students enrolled in private, high-tuition, research-oriented schools tended to depend more on scholarships/non-repayable funds, loans, and contributions from parents. Those attending schools which were public, low-tuition, and less research oriented depended more on funds contributed by their spouse. This could be due to both the greater number of married students in such schools and the larger roles of these spouses in providing funds.

I. INTRODUCTION

During the 1974-75 academic year, the Association of American Medical Colleges (AAMC) conducted a survey of U.S. medical students in order to find out how they were financing their education. In addition to data on various aspects of medical student finances, the survey also collected information on the demographic and background characteristics of students and on their career plans. The first report to be produced from this data, entitled "Survey of How Medical Students Finance Their Education, 1974-75,"* was an update of three previous studies on medical student finances.

A second report analyzed the relationship between medical student indebtedness and career plans.† Of particular interest was the degree of association of large debt with preferences for primary care and interest in underserved areas. "Medical School Finances and Personal Characteristics," the third report in the series, examined (1) factors related to the application for and receipt of financial aid, and (2) the major sources of student income.‡

This present study, the fourth in the series, examines the relationship of the income and expenses of medical students to selected institutional characteristics of medical schools. In the next part of the study (Part II), details on the study design are presented. Information on the survey, the quality of the data, and the statistical procedures employed is also included in that section.

Part III of this report presents the results and discussion. The analysis attempts to identify those medical school characteristics

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* Association of American Medical Colleges, Survey of How Medical Students Finance Their Education, 1974-75 (Washington, D.C.: Association of American Medical Colleges, 1975).

† R. E. Mantovani, T. L. Gordon, and D. G. Johnson, Medical Student Indebtedness and Career Plans, 1974-75. (Report prepared by the Association of American Medical Colleges for DHEW, Health Resources Administration, Bureau of Health Manpower, 1976.)

‡ R. E. Mantovani, Medical Student Finances and Personal Characteristics, 1974-75. (Report prepared by the Association of American Medical Colleges for DHEW, Health Resources Administration, Bureau of Health Manpower, 1976.)

associated with various patterns of student financing. A detailed analysis of the role of particular sources of scholarships, loans, and other forms of financial aid is also presented. A summary of the results and conclusions drawn from these findings appears in Part IV.

This report was prepared by Richard E. Mantovani, Research Associate, Division of Student Studies. The writer would like to acknowledge the aid given by Charles R. Sherman, Ph.D.; Michael G. McShane, Ph.D.: Travis L. Gordon; and Davis G. Johnson, Ph.D. (Director, Division of Student Studies).

II. METHODOLOGY

A. Data Sources

Data for this study were collected in the Survey of How Medical Students Finance Their Education, conducted by the Association of American Medical Colleges (AAMC) in the spring of 1975. A total of 23,233 questionnaires were distributed to a representative and anonymous sample of the 53,554 students enrolled in U.S. medical schools during the 1974-75 academic year. Of these, 11,552 questionnaires (49.7 percent) were returned by students from 110 schools.*

A subsample of 7,261 students--approximately 15 percent from each school--was selected for this study. For this "national" sample, Appendix A gives the number of students selected from each of the participating schools. The survey instrument used appears in Appendix B.

In order to assess the accuracy of students' responses to the financial aid questions, 417 randomly selected students were monitored by school officials using financial aid records. (See Appendix A for the number of monitored and non-monitored students from each school.) The verified responses of the monitored subsample were statistically compared with the responses of non-monitored students. This procedure yielded information on the reliability of the data for the total of 7,261 students in the national sample. The results of this comparison are given in the appendix to the 1975 BHM report, "How Medical Students Finance Their Education, 1974-75."

Data on medical school characteristics were originally derived from the AAMC's Institutional Profile System (IPS). IPS contains several thousand data elements on medical schools collected through various recurring as well as one-time special-purpose surveys. Although IPS contains data on medical schools

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* For various reasons, the following U.S. medical schools did not participate in the survey: Harvard Medical School, State University of New York at Stony Brook School of Medicine, University of Utah College of Medicine, Vandervilt University School of Medicine, University of Vermont College of Medicine, and Yale University School of Medicine. Fortunately, these schools are from various regions of the country and include both public and private institutions.

as far back as the 1959-60 academic year, the data used in this study were for the academic years 1973-74 and 1974-75.

B. Method of Analysis

In the previous financial aid studies in this series, medical student finances were described largely in terms of the student's family background and demographic characteristics. The present study explores an alternative hypothesis--namely, that medical schools, per se, influence student finances. The research strategy used to test this hypothesis identifies those characteristics of medical schools which are most closely related to observed variables in the income and expenses of medical students.

1. Student Finance Variables

Medical schools have a direct impact on student finances in two ways. First, the school, in administering financial aid, can help the student to meet educational costs, and thus may increase or decrease a student's need to draw upon alternative sources of aid such as parents or banks. The role of these alternative sources in supplying aid constitutes one major focus of this analysis.

The amount and proportion of funds from specific sources are compared for students enrolled at different schools. For the purpose of this analysis, a distinction is made between institutional and non-institutional sources of aid. Institutional aid, which includes scholarships and loans, is examined from the following major sources: (1) the federal government, (2) state governments, (3) medical schools, (4) non-profit institutions, and (5) banks. It should be noted that while medical schools administer aid monies from various sources, for this study only the aid actually supplied by the school is categorized as "Medical School" aid. Further details on the sources of institutional aid are given in Appendix C.

Non-institutional sources of aid--aid not in the from of scholarships or loans--include (1) the medical student, (2) his/her spouse, (3) relatives, and (4) in-laws. These sources are itemized in Appendix D.

In addition to examining the relative contributions of specific sources of funds, comparisons are made of funds from scholarships, loans (guaranteed and non-guaranteed), and contributions.

A second way that schools may impact on student finances is by altering tuition and other school-related expenses. Such changes can lead to increases in a student's total expenses, room and board, and other living expenses. Expenses are analyzed by examining the proportion and amount which is spent on tuition and fees, other educational expenses, room and board, and other living expenses.

2. Medical School Characteristics

There have been several attempts by researchers to classify medical schools on the basis of faculty, students, curricula, and other institutional characteristics.

Keeler, et al. of Rand Corporation, factor-analyzed 31 variables and found six major factors.* Most factors related to the different program orientations of medical schools (e.g., undergraduate medical education, graduate medical education, and non-M.D. education). Sherman, after factor analyzing 350 variables which described characteristics of medical schools, found 18 factors, of which the most important were (a) size, (b) control (private/public), (c) academic vs. clinical medical emphasis, and (d) faculty salaries.† Cuca, in a study of the career decisions of medical

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* E. Keeler, J. E. Koehler, C. Lee, and A. P. Williams, Jr. Finding Representative Academic Health Centers, A Working Note prepared for NIH/HEW (Santa Monica, Ca.: Rand Corp., 1972.)

† C. R. Sherman, Study of Medical Education: Interrelationships Between Faculty, Curriculum, Student and Institutional Variables (Washington, D.C.: Association of American Medical Colleges, 1975).

students, used these and other results to formulate several composite measures describing dimensions along which medical schools vary.* The principle dimensions examined in her study are size/affluence, research and practice orientations, emphasis on undergraduate medical education, and selectivity of the medical school in accepting undergraduates.

These studies served as guides in the selection of medical school characteristics which might be useful for this study. A preliminary analysis was performed on the variables selected from the above studies and on other characteristics that might be important in describing how medical schools affect student financing. From these analyses, some of the composite measures obtained from factor analysis were rejected for simpler measure; in other cases, the composite measures were modified but used in the analysis.† From this process the following variables were selected:

a. *Size of school* - The number of undergraduate medical students enrolled in the 1974-75 academic year.

b. *Research orientation of school* - The proportion of the school's budget used for sponsored research and for other "separately budgeted" research. The data for this variable are for the 1973-74 academic year, the latest data available at the time this analysis was conducted.

c. *Funding or revenue pattern* - A composite measure of the proportion of 1974-75 revenues derived from the following sources: (1) tuition, (2) endowments/gifts, (3) funds designated for sponsored research, (4) funds designated for teaching and training, and (5) state appropriations. Principal components analysis was applied to these variables and a composite measure was computed. High scores on the composite

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* J. M. Cuca, "Career Decisions of Senior Medical Students, 1976," working title for study in progress under BHM contract number 231-76-0011 (Washington, D.C.: Association of American Medical Colleges).

† The discussion of this process is given in Appendix E.

variable indicate strong dependence of schools on endowments/gifts and on funds designated for sponsored research. Low scores are indicative of strong dependence on the other three sources of revenues.

d. *Control of school* - This measure was derived through principal components analysis from the following variables relating to the 1974-75 academic year: (1) the proportion of revenues from non-state sources, (2) the ratio of in-state to out-of-state tuition rates, and (3) the ratio of the number of in-state to out-of-state residents. Schools ranking highest on this composite measure were the most autonomous from public control, while those ranking lowest were least autonomous from public control.

e. *Tuition* - In-state tuition for the academic year 1974-75 was used as the most representative single measure.

For each of the five types of institutional characteristics described above, medical schools were ranked and separated into quartiles. Because the purpose of this ranking was to classify medical schools, elimination of some schools would effect the classification and the results. Therefore, all schools for which IPS data exist were used to obtain the boundaries of the quartiles.* After the schools had been grouped, income and expense averages were computed for all students in each quartile and thus reflect the typical student in that quartile.

The analysis primarily concentrates on whether these averages show a constant change from the first to the fourth quartile, and not on the degree of change (or difference) between any two quartiles. Thus, the concern is not on the presence of statistically significant differences, but rather is on the degree of relationship between medical school characteristics and the averages computed from the various income and expense variables. By using the quartile

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* The six schools not participating in the 1974-75 survey appear in the quartiles but are treated as missing data in computing quartile statistics for student finance variables.

approach, these relationships can be discerned without employing more complicated statistical techniques.

C. Limitations of Study

Inferences drawn from this study, as in all studies, are limited by the type of sample drawn, the measures used, and the number and type of returns received. Before proceeding to the results and discussion, the following limitations should be emphasized:

1. Comparison of the data in the national sample with the total population of medical students in 1974-75 reveals that certain groups are slightly over or underrepresented. In particular, women and blacks tended to be underrepresented, while men, white/Caucasians, and students classifying themselves as other than "black" or "white" tended to be overrepresented. In addition, students in their first year of medical school tended to be overrepresented while those in their intermediate years tended to be underrepresented.*

2. A second limitation involves the use of this data to represent the current or future financial situations of medical students. Since 1974-75, the academic year covered by the survey, there have been sizeable increases in tuition and in other costs of obtaining an M.D. degree. In addition, financial aid available to students has been decreasing. These changes can be assumed to have had an effect on both student expenses and income.†

3. In ranking schools by quartiles, natural groups or clusters of schools are sometimes obscured. Although this problem imposes limitations in exploring some research questions, it does not reduce the ability to broadly describe the relationships addressed by this study.

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* Further information on these statistical comparisons appear in "How Medical Students Finance Their Education, 1974-75."

† A recent study addressing these issues is "The Role of Aid to Medical, Osteopathic and Dental Students in a New Health Manpower Education Policy," a staff working paper of August 1976 prepared by the Congressional Budget Office (Washington, D.C.: U.S. Government Printing Office, 1976).

4. In computing the average income and expenses, the aim was to obtain a financial profile of the typical student within each of the quartiles. Thus, the average amount of income obtained from spouse is not the average amount for married students, but rather the average amount for all students in a quartile, married or unmarried. Although this approach glosses over some of the important details of student finances, it still answers basic questions on the relationship between student finances and characteristics of medical schools.

III. RESULTS AND DISCUSSION

This section consists of five subsections, each of which examines the relationship of student variables to a particular medical school characteristic. These characteristics, in the order of their appearance, are: (A) size of medical school, (B) research orientation, (C) revenues, (D) control, and (E) tuition.

A. Size of Medical School and Student Financing

In Tables 1 through 5, the relationship between size of medical school and medical student finances is examined. In each of these tables, schools are categorized into quartiles by the number of M.D. students enrolled in the 1974-75 academic year. The first quartile includes those schools with the largest enrollments, while the fourth quartile includes schools with the smallest enrollments.*

Overall, these tables indicate that students in the first and second quartiles had higher average incomes ($9,060 and $9,075) than those in the third and fourth quartiles ($8,755 and $8,652). This indicates a positive relationship between average student income and size of medical school.

Table 1 summarizes the relationship between size of medical school and amount of institutional and non-institutional income received by the student in the 1974-75 academic year. On the average, students in all schools depended on institutional funds for 28.1 percent of their total income and on non-institutional funds for 71.9 percent of their income.

The data in Table 1 suggests that students in smaller schools depended more on institutional aid that students in larger schools, while those in larger schools depended on their own financial resources and that of their parents and other relatives to a greater degree. For instance, students in the largest schools (first quartile) received an average of $2,277 or 25.1 percent of their income from institutional sources, whereas students in the smallest schools (fourth quartile) averaged $2,670 or 30.9 percent.

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* See Appendix E for more detail on the grouping of these schools.

Table 1

Average Student Income From Institutional and Non-Institutional Sources by Size of Medical School, 1974-75

Grouping by Size of Medical School (1)	Average Income (2)	Institutional Sources of Income* Amount (3)	Institutional Sources of Income* Percent (4)	Non-Institutional Sources of Income† Amount (5)	Non-Institutional Sources of Income† Percent (6)
All Schools	$8,960	$2,514	28.1	$6,446	71.9
1st Quartile	9,060	2,277	25.1	6,783	74.9
2nd Quartile	9,075	2,634	29.0	6,441	71.0
3rd Quartile	8,755	2,708	30.9	6,047	69.1
4th Quartile	8,652	2,670	30.9	5,982	69.1

* Includes income from scholarships/non-repayable funds and loans.

† Includes student earnings or savings, contributions from spouse, parents/other relatives, and other funds not from scholarships/non-repayable funds and loans.

Institutional funds may be obtained from various sources, including the federal and state governments, medical schools, banks, and private foundations. Table 2 reports on the relationship between size of medical school and these sources of institutional aid. Of all the sources considered, the federal government's role was the largest--supplying on the average about $1,195 or 13.3 percent of total student income. Funds supplied by the federal government were particularly apparent for students in the smallest schools (the fourth quartile)

Table 2

Average Student Income From Institutional Sources by Size of Medical School, 1974-75*

Grouping by Size of Medical School	Average Income	Institutional Sources of Income													
		Institutional Sources (Total)		Federal		State		Medical Schools†		Non-Profit		Banks		Other Source Unspecified	
		Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
All Schools	$8,960	$2,514	28.1	$1,195	13.3	$128	1.4	$379	4.2	$121	1.4	$576	6.4	$115	1.3
1st Quartile	9,060	2,277	25.1	1,142	12.6	125	1.4	294	3.2	89	1.0	522	5.8	105	1.2
2nd Quartile	9,075	2,634	29.0	1,231	13.6	124	1.4	442	4.9	131	1.4	585	6.4	121	1.3
3rd Quartile	8,755	2,708	30.9	1,129	12.9	138	1.6	478	5.5	173	2.0	660	7.5	130	1.5
4th Quartile	8,652	2,670	30.9	1,409	16.3	127	1.5	327	3.8	109	1.3	592	5.8	106	1.2

* See Appendix B for details on specific programs for each of these sources.

† Limited to school funds. Excludes funds administered by but not provided by the schools themselves.

where they accounted for an average of $1,409 or 16.3 percent of the student's total income.

Banks were the second largest source of institutional income for medical students, supplying an average of $576 per student or approximately 6.4 percent of his or her income. Although the role of medical schools in supplying financial aid was slightly less than that of banks, the two were more similar to each other than to the federal government. Overall, medical schools supplied on the average $379 (or 4.2 percent) of the student's total income. When size of school is related to student income from banks and medical schools, the pattern reveals that the typical student in schools included in the second and third quartiles received both larger amounts and a greater proportion of their incomes from these sources than did students in the other two quartiles.

State governments, non-profit institutions, and "other" sources played a relatively small part in supplying funds to medical students. These sources each provided less than 2.0 percent of total student income. Neither the amount supplied nor the proportion of total income from these sources seemed to be related to size of school.

Specific non-institutional sources of income (including the student, his or her spouse, parents, and relatives) are examined in Table 3 by size of medical school. The most important non-institutional source was the spouse, who supplied an average of $2,129, amounting to 23.8 percent of student income. For this source, the data indicate a positive association between amount of income received and size of school.

The financial resources of the student, the student's parents and relatives, and other unspecified non-institutional sources each played approximately the same role in financing students--each of these sources supplying from $1,400 to $1,500 or approximately 16 percent of total student income. Although students in the first quartile received greater amounts and proportions of their income from these sources than did students in other quartiles, there is no consistent pattern that would indicate a relationship between size of medical school and income received from these sources.

Table 4 presents the relationship between size of medical school and the following types of income: student's earnings,

Table 3

Average Student Income From Non-Institutional Sources by Size of Medical School, 1974-75

Grouping by Size of Medical School	Average Income	Non-Institutional Sources of Income*									
		Total Non-Institutional Sources		Student		Spouse		Parents & Relatives†		Other Non-Institutional Sources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Schools	$8,960	$6,446	71.9	$1,486	16.6	$2,129	23.8	$1,400	15.6	$1,431	16.0
1st Quartile	9,060	6,783	74.9	1,550	17.1	2,235	24.7	1,486	16.4	1,512	16.7
2nd Quartile	9,075	6,441	71.0	1,431	15.8	2,192	24.0	1,366	15.1	1,462	16.1
3rd Quartile	8,755	6,047	69.1	1,446	16.5	1,915	21.9	1,424	16.3	1,262	14.4
4th Quartile	8,652	5,982	69.1	1,483	17.1	2,003	23.2	1,135	13.1	1,361	15.7

* For itemized information on these sources, see Appendix C.

† These only include parents and relatives of the student but not the spouse nor in-laws of the student.

contributions (from spouse, parents, and other relatives), guaranteed and non-guaranteed loans, and non-repayable funds such as scholarships. Among these types of income, "contributions" played the major role, accounting for 44.6 percent (or $3,995 on the average) of total student income. Other non-institutional types of income (student earnings and other resources) together constituted approximately 27 percent of the student income.

Of the institutional sources of income, non-repayable funds or scholarships accounted 13.3 percent of total student income, while non-guaranteed and guaranteed loans accounted for 7.9 and 6.8 percent, respectively (See Table 4).

Generally, the data for particular quartiles show that income from non-institutional sources (student earnings, contributions, and other income) was higher in both amount and proportion for students from larger schools--a finding that is consistent with the results from Table 1 of this report. Conversely, income from non-repayable funds was less, both in amount and proportion, for larger

schools. This pattern is similar to that observed in Table 1 for institutional funds, of which "non-repayable funds" is a component.

Guaranteed and non-guaranteed loans show a pattern similar to that found in Table 2 for banks and medical schools. Students in the middle range of schools (second and third quartiles) received more income from these types of funds than students from first- and fourth-quartile schools. This pattern was also evident for the proportion of total income received from loans.

The relationship between student expenses and size of medical school is presented in Table 5. The cost of room and board was the largest component--37.6 percent--of student expenses. "Tuition and fees" and "other expenses" each constituted approximately 28 percent of medical student expenses.

Although differences in the various expense variables are apparent across the quartiles, no consistent or easily identifiable pattern is observed.

Table 4

Average Student Income From Earnings, Contributions, Loans and Scholarships by Size of Medical School, 1974-75

Grouping by Size of Medical School	Average Income	TYPE OF INCOME*											
		Student Earnings		Contributions+		Guaranteed Loans		Other Loans		Non-Repayable Funds		Other Resources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
All Schools	$8,960	$745	8.3	$3,995	44.6	$613	6.8	$708	7.9	$1,192	13.3	$1,707	19.1
1st Quartile	9,060	817	9.0	4,197	46.3	563	6.2	670	7.4	1,044	11.5	1,769	19.5
2nd Quartile	9,075	742	8.2	4,024	44.3	638	7.0	737	8.1	1,258	13.9	1,676	18.5
3rd Quartile	8,755	636	7.3	3,739	42.7	683	7.8	750	8.5	1,276	14.6	1,671	19.0
4th Quartile	8,852	691	8.0	3,661	42.3	593	6.9	690	8.0	1,386	16.0	1,631	18.9

* See Appendices B and C for more detail on how these types were constructed.

+ These include contributions from spouse, from the student's parents and relatives, and from the student's in-laws.

Table 5

Average Student Expenses by Size of Medical School, 1974-75

Grouping by Size of Medical School (1)	Average Expenses (2)	Educational Expenses				Personal Expenses			
		Tuition & Fees		Other		Room & Board		Other*	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)	Amount (7)	Percent (8)	Amount (9)	Percent (10)
All Schools	$7,051	$1,984	28.1	$385	5.5	$2,650	37.6	$2,031	28.8
1st Quartile	7,024	1,961	27.9	407	5.8	2,613	37.2	2,043	29.1
2nd Quartile	7,155	2,017	28.2	373	5.2	2,699	37.7	2,066	28.9
3rd Quartile	7,133	2,166	30.4	373	5.2	2,629	36.8	1,966	27.6
4th Quartile	6,700	1,637	24.4	363	5.4	2,685	40.1	2,015	30.1

* These include expenses for clothing, health care, transportation, and other miscellaneous items.

B. Research Orientation of Medical School and Student Financing

Tables 6 to 10 highlight the relationship between the research orientation of medical schools and student financing. Schools are ranked and separated into quartiles by their research orientation, as measured by the proportion of their budget spent on research. Schools with the strongest research orientation are grouped in the first quartile, while those with the weakest research orientation are in the fourth quartile.

Table 6 summarizes the relationship between research orientation and the comparative roles played by institutional and non-institutional funds in financing medical students. Average income (column 2) was highest ($9,257) for schools with the strongest research orientation. Generally, their students received greater amounts of funds from institutional sources. On the other hand, the amount of income received from non-institutional sources does not seem to be associated with research orientation. This is indicated by the similarity of such incomes for schools in the first and last quartiles ($6,456 and $6,438, respectively). Although the percentages show that dependence on institutional sources of income increase as research orientation increases, this difference was small as

Table 6

Average Student Income From Institutional and Non-Institutional Sources by Research Orientation of Medical School, 1974-75

Grouping by Research Orientation	Average Income	Institutional Sources of Income*		Non-Institutional Sources of Income †	
		Amount	Percent	Amount	Percent
(1)	(2)	(3)	(4)	(5)	(6)
All Schools	$8,960	$2,514	28.1	$6,446	71.9
1st Quartile	9,257	2,801	30.3	6,456	69.7
2nd Quartile	8,909	2,595	29.1	6,314	70.9
3rd Quartile	8,800	2,201	25.0	6,599	75.0
4th Quartile	8,936	2,498	28.0	6,438	72.0

* Includes income from scholarships/non-repayable funds and loans.

† Includes student earnings or savings, contributions from spouse, parents/other relatives, and other funds not from scholarships/non-repayable funds and loans.

indicated by the similarity of average incomes for the first and last quartiles.

Table 7 provides details on the student income obtained from institutional sources of aid. Although differences can be observed for most of these sources in the amount of income and proportion of aid received from a given source, these differences are not large. However, when income from medical

Table 7

Average Student Income From Institutional Sources by Research Orientation of Medical School, 1974-75

Grouping by Research Orientation	Average Income	Institutional Sources of Income*													
		Institutional Sources (Total)		Federal		State		Medical Schools†		Non-Profit		Banks		Other Source Unspecified	
		Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
All Schools	$8,960	$2,514	28.1	$1,195	13.3	$128	1.4	$379	4.2	$121	1.4	$576	6.4	$115	1.3
1st Quartile	9,257	2,801	30.3	1,147	12.4	143	1.5	631	6.8	111	1.2	638	6.9	131	1.4
2nd Quartile	8,909	2,595	29.1	1,227	13.8	130	1.5	415	4.7	149	1.7	578	6.5	95	1.1
3rd Quartile	8,800	2,201	25.0	1,155	13.1	121	1.4	244	2.8	68	0.8	512	5.8	101	1.1
4th Quartile	8,936	2,498	28.0	1,269	14.2	121	1.4	184	2.1	170	1.9	613	6.9	140	1.5

* See Appendix B for details on specific programs for each of these sources.

† Limited to school funds. Excludes funds administered by but not provided by the schools themselves.

school is considered, it is apparent that as the research orientation of the school rises, the amount of support received increases--from $184 on the average for students in fourth-quartile schools to $631 for students in first-quartile schools.* This positive relationship is also observed for the proportion of income received. For schools in the fourth quartile, medical school funds constituted 2.1 percent of total student income, while for schools in the first quartile this proportion increased to 6.8 percent. It can be concluded that schools with high research orientation were more active as funding sources for their students than schools with lower research orientation.

Table 8 reports the relationship between research orientation and non-institutional sources of income. The most apparent differences between quartiles relates to spouses' income. Students in schools with the least research orientation (third and fourth quartiles) averaged more income from their spouses than did students in schools with stronger research orientation. For instance, for students in the first quartile, income received averaged $1,843 or 19.9 percent of student income. However, students in the fourth quartile averaged $2,389 or 26.7 percent of their income from this source. Third-quartile students, who obtained the most from their spouses ($2,444 or 27.7 percent of their total income), also received the least from their parents and relatives other than spouse or in-laws ($1,151 or 13.1 percent). Students in other quartiles were similar to each other in their dependence on parents and relatives. Finally, income received from other non-institutional sources (i.e., personal loans and contributions from in-laws except spouse) generally rises as research orientation increases.

Table 9 demonstrates the relationship between research orientation of medical schools and type of income received by their students. Little variation was observed across quartiles with respect to the income received from various types of funds.

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* It should be remembered that medical schools, in addition to awarding their own funds, also act as administrators of aid from other sources, and therefore control the distribution of more funds than shown in Table 7.

Table 8

Average Student Income From Non-Institutional Sources by Research Orientation of Medical School, 1974-75

Grouping by Research Orientation	Average Income	Non-Institutional Sources of Income *									
		Total Non-Institutional Sources		Student		Spouse		Parents & Relatives†		Other Non-Institutional Sources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Schools	$8,960	$6,446	71.9	$1,486	16.6	$2,129	23.8	$1,400	15.6	$1,431	16.0
1st Quartile	9,257	6,456	69.7	1,436	15.5	1,843	19.9	1,599	17.3	1,578	17.0
2nd Quartile	8,909	6,314	70.9	1,527	17.1	1,897	21.3	1,448	16.3	1,442	16.2
3rd Quartile	8,800	6,599	75.0	1,524	17.3	2,444	27.7	1,151	13.1	1,480	16.8
4th Quartile	8,936	6,438	72.0	1,472	16.5	2,389	26.7	1,420	15.9	1,157	12.9

* For itemized information on these sources, see Appendix C.

† These only include parents and relatives of the student but not the spouse nor in-laws of the student.

However, contributions from spouse, parents, and other relatives had a slight negative relationship with research orientation. In schools ranked strongest in research orientation, students received $3,974 on the average (or 42.9 percent of their income) from contributions. In schools with low research orientation, the amount and proportion received from this source increased to $4,241 and 48.2 percent respectively. Thus, the indication is that students in schools with high research orientation receive proportionately more income from sources other than contributions from relatives.

When loans and non-repayable funds are examined in Table 9 (columns 7-12), it can be observed that students in schools above the median in research orientation (first and second quartiles) receive a larger total and a greater proportion of their income from such sources than did those in schools below the median.

Table 10, examining the relationship between student expenses and the research orientation of medical schools, shows that schools that are highly oriented towards research had the highest average expenses ($7,594) and those in the third quartile the lowest ($6,546). Second- and fourth-quartile students were similar to one another and fell between the extremes.

Tuition and fees were positively associated with the research orientation both in amount and proportion. For students in the first quartile, tuition and fees averaged $2,607, which amounted to 34.3 percent of total expenses. Fourth-quartile students averaged $1,694 or 23.9 percent of all expenses.

Although the amount spent on living expenses is similar for students in schools in the first and third quartiles, students in the more research-oriented schools paid proportionately less for these expenses. Students in fourth-quartile schools (those that are least involved in research) spent more on living expenses than other students; however, the proportion spent on such expenses was comparable to those students in the third quartile (39.1 and 39.7 percent respectively). The general

Table 9

Average Student Income From Earnings, Contributions, Loans and Scholarships

by Research Orientation of Medical School, 1974-75

Grouping by Research Orientation	Average Income	TYPE OF INCOME*											
		Student Earnings		Contributions†		Guaranteed Loans		Other Loans		Non-Repayable Funds		Other Resources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
All Schools	$8,960	$745	8.3	$3,995	44.6	$613	6.8	$708	7.9	$1,192	13.3	$1,707	19.1
1st Quartile	9,257	783	8.5	3,974	42.9	738	8.0	753	8.1	1,309	14.1	1,700	18.4
2nd Quartile	8,909	774	8.7	3,821	42.9	641	7.2	756	8.5	1,197	13.4	1,720	19.3
3rd Quartile	8,800	805	9.1	4,021	45.7	502	5.7	620	7.0	1,080	12.3	1,772	20.1
4th Quartile	8,936	598	6.9	4,241	48.2	597	6.8	721	8.2	1,180	13.4	1,599	18.2

* See Appendices B and C for more detail on how these types were constructed.

† These include contributions from spouse, from the student's parents and relatives, and from the student's in-laws.

Table 10

Average Student Expenses by Research Orientation of Medical School, 1974-75

Grouping by Research Orientation (1)	Average Expenses (2)	Educational Expenses				Personal Expenses			
		Tuition & Fees		Other		Room & Board		Other*	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)	Amount (7)	Percent (8)	Amount (9)	Percent (10)
All Schools	$7,051	$1,984	28.1	$385	5.5	$2,650	37.6	$2,031	28.8
1st Quartile	7,594	2,607	34.3	363	4.8	2,655	35.0	1,969	25.9
2nd Quartile	7,068	2,120	30.0	391	5.5	2,605	36.9	1,952	27.6
3rd Quartile	6,546	1,533	23.4	381	5.8	2,602	39.7	2,029	31.0
4th Quartile	7,075	1,694	23.9	414	5.9	2,763	39.1	2,204	31.2

* These include expenses for clothing, health care, transportation, and other miscellaneous items.

similarities in living expenses among students within different quartiles indicate that differences in total expenses are attributable to the dissimilarities in tuition expenses. Thus, students in schools with a strong research orientation would need relatively more income to meet the higher tuition cost.

C. Medical School Revenues and Student Financing

Although medical schools use a variety of funding sources to meet their financial obligations, most tend to rely heavily on revenues from a few major sources. Differences in how a school draws its revenues are referred to in this study as the school's funding or revenue pattern.

The medical schools which are most dependent on revenues from endowments/gifts and from sponsored research were grouped in the first quartile. Schools least dependent on these sources (and which depend the most on revenues from tuition, state appropriations, and sponsored funds for teaching and training) are found in the fourth quartile.

As shown in Table 11, average total income was highest for students in schools that were most and least dependent (first- and

Table 11

Average Student Income From Institutional and Non-Institutional Sources by Funding Pattern of Medical School, 1974-75

Grouping by Funding Pattern of Medical School (1)	Average Income (2)	Institutional Sources of Income*		Non-Institutional Sources of Income†	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)
All Schools	$8,960	$2,514	28.1	$6,446	71.9
1st Quartile	9,212	2,905	31.5	6,307	68.5
2nd Quartile	8,637	2,237	25.9	6,400	74.1
3rd Quartile	8,710	2,362	27.1	6,348	72.9
4th Quartile	9,310	2,602	27.9	6,708	72.1

* Includes income from scholarships/non-repayable funds and loans.

† Includes student earnings or savings, contributions from spouse, parents/other relatives, and other funds not from scholarships/non-repayable funds and loans.

fourth-quartile schools) on endowments/gifts and on sponsored funds for research. Students in the first quartile received proportionately and absolutely more of their income from institutional sources than did other students. Students in other quartiles tended to receive proportionately more of their income from non-institutional sources.

Table 12 indicates only small differences in the students' relative income from specific institutional sources. However,

Table 12

Average Student Income From Institutional Sources by Funding Pattern+ of Medical School, 1974-75

Grouping by Funding Pattern of Medical School (1)	Average Income (2)	Institutional Sources of Income*													
		Institutional Sources (Total)		Federal		State		Medical Schools†		Non-Profit		Banks		Other Source Unspecified	
		Amount (3)	Pct (4)	Amount (5)	Pct (6)	Amount (7)	Pct (8)	Amount (9)	Pct (10)	Amount (11)	Pct (12)	Amount (13)	Pct (14)	Amount (15)	Pct (16)
All Schools	$8,960	$2,514	28.1	$1,195	13.3	$128	1.4	$379	4.2	$121	1.4	$576	6.4	$115	1.3
1st Quartile	9,212	2,905	31.5	1,146	12.4	172	1.9	717	7.8	108	1.2	626	6.8	136	1.5
2nd Quartile	8,637	2,237	25.9	1,198	13.9	81	.9	332	3.8	102	1.2	438	5.1	86	1.0
3rd Quartile	8,710	2,362	27.1	1,208	13.9	156	1.8	237	2.7	83	1.0	555	6.4	123	1.4
4th Quartile	9,310	2,602	27.9	1,211	13.0	107	1.1	274	2.9	191	2.1	698	7.5	121	1.3

+ Schools ranked in the upper quartiles receive proportionately more revenue from endowments/gifts and from sponsored research.

* See Appendix B for more details on specific programs for each of these sources.

† Limited to school funds. Excludes funds administered by but not provided by the schools themselves.

income supplied by medical schools is an exception. The data indicate that medical schools highly dependent on revenues from research funding and endowments/gifts supplied the student, on the average, with more aid than did schools dependent on other sources of revenue. For example, students in the first quartile received $717 on the average or 7.8 percent of their total income from their schools, whereas students in the fourth quartile averaged $274 (almost $450 less) or 2.9 percent of their income from the school.

With respect to non-institutional sources of income (Table 13), the data indicate that students in first-quartile schools (those with high dependence on research funding and endowments) depended proportionately less on their own resources (such as earnings or savings) and on their spouses than did students in other quartiles. Conversely, the first-quartile students received proportionately more income from their parents and other relatives than did other students.

Table 13

Average Student Income From Non-Institutional Sources by Funding Pattern+ of Medical School, 1974-75

Grouping by Funding Pattern of Medical School	Average Income	Non-Institutional Sources of Income*									
		Total Non-Institutional Sources		Student		Spouse		Parents & Relatives†		Other Non-Institutional Sources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Schools	$8,960	$6,446	71.9	$1,486	16.6	$2,129	23.8	$1,400	15.6	$1,431	16.0
1st Quartile	9,212	6,307	68.5	1,319	14.3	1,804	19.6	1,658	18.0	1,526	16.6
2nd Quartile	8,637	6,400	74.1	1,633	18.9	2,166	25.1	1,262	14.6	1,339	15.5
3rd Quartile	8,710	6,348	72.9	1,545	17.7	2,227	25.6	1,266	14.5	1,309	15.0
4th Quartile	9,310	6,708	72.1	1,481	15.9	2,298	24.6	1,437	15.4	1,492	16.0

+ Schools ranked in the upper quartiles receive proportionately more revenue from endowments/gifts and from sponsored research.

* For itemized information on these sources, see Appendix C.

† These only include parents and relatives of the student but not the spouse nor in-laws of the student.

Table 14

Average Student Income From Earnings, Contributions, Loans and Scholarships

by Funding Pattern+ of Medical School, 1974-75

Grouping by Funding Pattern of Medical School (1)	Average Income (2)	TYPE OF INCOME*											
		Student Earnings		Contributions†		Guaranteed Loans		Other Loans		Non-Repayable Funds		Other Resources	
		Amt. (3)	% (4)	Amt. (5)	% (6)	Amt. (7)	% (8)	Amt. (9)	% (10)	Amt. (11)	% (12)	Amt. (13)	% (14)
All Schools	$8,960	$745	8.3	$3,995	44.6	$613	6.8	$708	7.9	$1,192	13.3	$1,707	19.1
1st Quartile	9,212	676	7.3	4,005	43.5	746	8.1	740	8.0	1,419	15.4	1,626	17.7
2nd Quartile	8,637	776	9.0	3,865	44.7	467	5.4	655	7.6	1,114	12.9	1,760	20.4
3rd Quartile	8,710	824	9.5	3,887	44.6	565	6.5	668	7.7	1,130	13.0	1,636	18.8
4th Quartile	9,310	714	7.7	4,230	45.4	699	7.5	779	8.4	1,124	12.1	1,764	18.9

+ Schools ranked in the upper quartiles receive proportionately more revenue from endowments/gifts and from sponsored research.

* See Appendices B and C for more detail on how these types were constructed.

† These include contributions from spouse, from the student's parents and relatives, and from the student's in-laws.

In Table 14, non-repayable funds (including scholarships) are most related to those schools dependent on endowments/gifts and on sponsored research revenues. For example, students in the first quartile averaged $1,419 or 15.4 percent of their income from non-repayable sources, while students in other quartiles received from $1,114 to $1,130 on the average from such sources. In addition, students in the first and last quartiles, when compared to students in the second and third quartiles, received proportionately less income from their own earnings and proportionately more funds from guaranteed loans and other loans.

Table 15, reporting on student expenses, indicates that tuition and fees were larger for students in the first and fourth quartiles. As in Table 10, the average amount spent for room, board, and other living expenses were similar for all quartiles.

D. Control of Medical School and Student Financing

The traditional distinction between publicly and privately controlled medical schools has become blurred as private schools increase dependence on public subsidies as a source of revenue. This study, instead of classifying schools as private vs.

Table 15

Average Student Expenses by Funding Pattern+ of Medical School, 1974-75

Grouping by Funding Pattern (1)	Average Expenses (2)	Educational Expenses				Personal Expenses			
		Tuition & Fees		Other		Room & Board		Other*	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)	Amount (7)	Percent (8)	Amount (9)	Percent (10)
All Schools	$7,051	$1,984	28.1	$385	5.5	$2,650	37.6	$2,031	28.8
1st Quartile	7,485	2,537	33.9	375	5.0	2,645	35.3	1,927	25.7
2nd Quartile	6,609	1,584	24.0	373	5.6	2,646	40.0	2,006	30.4
3rd Quartile	6,672	1,643	24.6	396	5.9	2,610	39.1	2,025	30.4
4th Quartile	7,482	2,235	29.9	398	5.3	2,696	36.0	2,153	28.8

* These include expenses for clothing, health care, transportation, and other miscellaneous items.

\+ Schools ranked in upper quartiles receive proportionately more revenue from endowments/gifts and from sponsored research.

public, attempts to measure the degree to which the schools are autonomous from public control. The measure of autonomy uses a combination of the following three variables: (1) proportion of revenues from non-state sources, (2) ratio of in-state to out-of-state tuition, and (3) ratio of in-state to out-of-state residents.

Medical schools ranking highest on the control of school measure were most autonomous from public control, while those ranking lowest were least autonomous from public control. Therefore, these schools were grouped in the first and fourth quartiles respectively. Tables 16-20 use these quartiles to analyze various aspects of student finances.

Table 16 demonstrates that the average income was highest for students attending schools with more autonomy from public control ($9,749). This income was generally lower with less medical school autonomy. As indicated in column 2, the average amount of income received by students from institutional sources was highest at the more autonomous (first-quartile) schools. For example, students enrolled in the fourth quartile averaged $2,159 or 24.9 percent of their income from such sources. With respect to non-institutional sources of income,

Table 16

Average Student Income From Institutional and Non-Institutional Sources by Control+ of Medical School, 1974-75

Grouping by Control of Medical School	Average Income	Institutional Sources of Income*		Non-Institutional Sources of Income†	
		Amount	Percent	Amount	Percent
(1)	(2)	(3)	(4)	(5)	(6)
All Schools	$8,960	$2,514	28.1	$6,446	71.9
1st Quartile	9,749	3,109	31.9	6,640	68.1
2nd Quartile	9,014	2,476	27.5	6,538	72.5
3rd Quartile	8,356	2,275	27.2	6,081	72.8
4th Quartile	8,686	2,159	24.9	6,527	75.1

+ Schools in the first quartile are highly autonomous from public control.

* Includes income from scholarships/non-repayable funds and loans.

† Includes student earnings or savings, contributions from spouse, parents/other relatives, and other funds not from scholarships/non-repayable funds and loans.

average amounts received were similar across all quartiles except the third, in which students reported less income. As columns 3 and 5 of this table indicate, the degree to which student income was derived from institutional sources (rather than non-institutional sources) was positively associated with degree of autonomy.

Table 17 shows the relationship of medical school autonomy to student income from specific institutional sources.

Table 17

Average Student Income From Institutional Sources by Control+ of Medical School, 1974-75

Grouping by Control of Medical School	Average Income	Institutional Sources of Income*													
		Institutional Sources (Total)		Federal		State		Medical Schools†		Non-Profit		Banks		Other Source Unspecified	
		Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
All Schools	$8,960	$2,514	28.1	$1,195	13.3	$128	1.4	$379	4.2	$121	1.9	$576	6.4	$115	1.3
1st Quartile	9,749	3,109	31.9	1,310	13.4	138	1.4	606	6.2	183	1.9	737	7.6	135	1.4
2nd Quartile	9,014	2,476	27.5	1,056	11.7	131	1.5	347	3.8	122	1.4	726	8.1	94	1.0
3rd Quartile	8,356	2,275	27.2	1,207	14.4	147	1.8	320	3.8	78	.9	397	4.8	126	1.5
4th Quartile	8,686	2,159	24.9	1,199	13.8	93	1.1	226	2.6	96	1.1	440	5.1	105	1.2

+ Schools in the first quartile are highly autonomous from public control.

* See Appendix B for details on specific programs for each of these sources.

† Limited to school funds. Excludes funds administered by but not provided by the schools themselves.

Particularly evident is the greater amount of funds provided by medical schools and banks to students at the more autonomous schools. For example, first-quartile students averaged $606 (or 6.2 percent of their income) from medical schools and $737 (or 7.6 percent) from banks. In comparison, students in the fourth quartile received an average of $226 (or 2.6 percent) from medical schools and $440 (or 5.1 percent) from banks.

When non-institutional sources are examined (Table 18), students in the least autonomous schools received more income from the spouse than students in the most autonomous schools. This trend is reversed when contributions from parents and other relatives (excluding in-laws) are considered. In this case, students from schools that are grouped in the first quartile received more income on the average from this source ($1,940 or 19.9 percent of their income) than students in the fourth quartile, who averaged $1,092 or 12.6 percent of their income from the same source. Although the amount of income from students'

Table 18

Average Student Income From Non-Institutional Sources by Control* of Medical School, 1974-75

Grouping by Control of Medical School	Average Income	Non-Institutional Sources of Income+									
		Total Non-Institutional Sources		Student		Spouse		Parents & Relatives†		Other Non-Institutional Sources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Schools	$8,960	$6,446	71.9	$1,436	16.6	$2,129	23.8	$1,400	15.6	$1,431	16.0
1st Quartile	9,749	6,640	68.1	1,426	14.6	1,770	18.2	1,940	19.9	1,504	15.4
2nd Quartile	9,014	6,538	72.5	1,522	16.9	1,964	21.8	1,547	17.2	1,505	16.7
3rd Quartile	8,356	6,081	72.8	1,437	17.2	2,367	28.3	993	11.9	1,284	15.4
4th Quartile	8,686	6,527	75.1	1,566	18.0	2,438	28.1	1,092	12.6	1,431	16.5

* Schools in the first quartile are highly autonomous from public control.

\+ For detailed information on these sources, see Appendix C.

† These only include parents and relatives of the student but not the spouse or in-laws of the student.

own resources (earnings and savings, for the most part) varies among quartiles, the proportion of total income these funds represent declines as autonomy decreases.

The relative importance of loans (both guaranteed and non-guaranteed) and of non-repayable funds to students in highly autonomous schools (first quartile) is shown in Table 19. These students received on the average 8.3 percent of their income (or $813) from guaranteed loans, 8.6 percent (or $835) from non-guaranteed loans, and 15 percent ($1,461) from non-repayable funds. In comparison, students in the fourth quartile averaged 4.8 percent from guaranteed loans, 7.2 percent from non-guaranteed loans, and 12.8 percent from non-repayable funds. These results support the previous observation that a school's autonomy from public control is positively related to student aid from institutional sources in general.

Table 20 indicates that students enrolled in more autonomous schools had greater expenses. For instance, students in

Table 19

Average Student Income From Earnings, Contributions, Loans and Scholarships by Control+ of Medical School, 1974-75

Grouping by Control of Medical School	Average Income	TYPE OF INCOME*											
		Student Earnings		Contributions†		Guaranteed Loans		Other Loans		Non-Repayable Funds		Other Resources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
All Schools	$8,960	$745	8.3	$3,995	44.6	$613	6.8	$708	7.9	$1,192	13.3	$1,707	19.1
1st Quartile	9,749	709	7.3	4,291	44.0	813	8.3	835	8.6	1,461	15.0	1,640	16.8
2nd Quartile	9,014	777	8.6	3,961	43.9	755	8.4	700	7.8	1,021	11.3	1,800	20.0
3rd Quartile	8,356	753	9.0	3,740	44.8	457	5.5	661	7.9	1,157	13.8	1,588	19.0
4th Quartile	8,686	744	8.6	3,976	45.8	418	4.8	629	7.2	1,111	12.8	1,808	20.8

+ Schools grouped in the first quartile are highly autonomous from public control.

* See Appendices B and C for more detail on how these types were constructed.

† These include contributions from spouse, from the student's parents and relatives, and from the student's in-laws.

Table 20

Average Student Expenses by Control+ of Medical School, 1974-75

Grouping by Control of Medical School (1)	Average Expenses (2)	Educational Expenses				Personal Expenses			
		Tuition & Fees		Other		Room & Board		Other*	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)	Amount (7)	Percent (8)	Amount (9)	Percent (10)
All Schools	$7,051	$1,984	28.1	$385	5.5	$2,650	37.6	$2,031	28.8
1st Quartile	8,236	3,256	39.5	405	4.9	2,641	32.1	1,933	23.5
2nd Quartile	7,201	2,257	31.3	414	5.7	2,607	36.2	1,923	26.7
3rd Quartile	6,358	1,295	20.4	349	5.5	2,635	41.4	2,078	32.7
4th Quartile	6,341	1,048	16.5	372	5.9	2,721	42.9	2,200	34.7

* These include expenses for clothing, health care, transportation, and other miscellaneous items.

\+ Schools in the first quartile are highly autonomous from public control.

the first quartile averaged $8,236 in total expenses, of which 39.5 percent was for tuition and fees and 55.6 percent was for room, board, and other expenses. Student expenses in fourth-quartile schools, on the other hand, averaged almost $2,000 less ($6,341). Such students spent only 16.5 percent of their income on tuition and fees, and 77.6 percent on room, board, and other expenses.

When room and board and "other" expenses are combined, the difference between these costs for students in the first and fourth quartiles was less than $400--an average of $4,574 for first-quartile students and $4,921 for fourth-quartile students (derived from Table 20). Thus, most of the difference in total expenses (observed in column 2 of Table 20) is attributable to tuition and fees, and not from differences in overall living expenses.

E. Tuition Rate of Medical School and Student Financing

Tables 21-25 give data on the relationship between the 1974-75 in-state tuition rates of medical schools and student financing. In these tables, first-quartile schools had the highest tuitions and fourth-quartile schools had the lowest.

Table 21 shows that total average income increases as tuition increases. For example, students in low-tuition or fourth-quartile schools had an average income of $8,259 while those in high-tuition or first-quartile schools averaged $10,254. This trend is also apparent in columns 3 and 4, which report income received from institutional sources. Whereas fourth-quartile students received $2,178 (or 26.4 percent of their income) from institutional sources, first-quartile students averaged $3,084 (or 30.1 percent)--a difference of more than $900. Likewise, the amount of student income from non-institutional sources generally increased as tuition level increase. Fourth-quartile students

Table 21

Average Student Income From Institutional and Non-Institutional Sources by Tuition+ of Medical School, 1974-75

Grouping by Tuition of Medical School	Average Income	Institutional Sources of Income*		Non-Institutional Sources of Income †	
		Amount	Percent	Amount	Percent
(1)	(2)	(3)	(4)	(5)	(6)
All Schools	$8,960	$2,514	28.1	$6,446	71.9
1st Quartile	10,254	3,084	30.1	7,170	69.9
2nd Quartile	8,724	2,612	29.9	6,112	70.1
3rd Quartile	8,484	2,052	24.2	6,432	75.8
4th Quartile	8,259	2,178	26.4	6,081	73.6

+ In-state tuition.

* Includes income from scholarships/non-repayable funds and loans.

† Includes student earnings or savings, contributions from spouse, parents/other relatives, and other funds not from scholarships/non-repayable funds and loans.

Table 22

Average Student Income From Institutional Sources by Tuition+ of Medical School, 1974-75

Grouping by Tuition of Medical School	Average Income	Institutional Sources of Income *											
		Institutional Sources (Total)		Federal		State		Medical Schools †		Non-Profit		Banks		Other Source Unspecified	
		Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct	Amount	Pct
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
All Schools	$8,960	$2,514	28.1	$1,195	13.3	$128	1.4	$379	4.2	$121	1.4	$576	6.4	$115	1.3
1st Quartile	10,254	3,084	30.1	1,225	11.9	154	1.5	542	5.3	160	1.6	899	8.8	104	1.0
2nd Quartile	8,724	2,612	29.9	1,189	13.6	155	1.7	413	4.7	136	1.6	582	6.7	137	1.6
3rd Quartile	8,484	2,052	24.2	1,180	13.9	76	.9	230	2.7	86	1.0	394	4.6	86	1.0
4th Quartile	8,259	2,178	26.4	1,182	14.3	110	1.3	290	3.5	91	1.1	379	4.6	126	1.5

+ In-state tuition only.

* See Appendix B for details on specific programs for each of these sources.

† Limited to school funds. Excludes funds administered by but not provided by the schools themselves.

averaged $6,081 from non-institutional sources while students in the first quartile received $7,170 on the average from this source.

Tables 22 and 23 investigate the roles of specific sources of institutional and non-institutional incomes in financing medical students. Of institutional sources (Table 22), medical schools and banks were more important sources of aid to students in high-tuition schools (first-quartile schools), who received an average of $542 (or 5.3 percent of their income) from medical schools and $899 (or 8.8 percent) from banks. Students in the low-tuition schools (fourth-quartile schools) averaged $290 (or 3.5 percent of their income) from medical schools and $379 (or 4.6 percent) from banks. Income from federal government sources, although not differing in absolute amount (column 5), did

Table 23

Average Student Income From Non-Institutional Sources by Tuition+ of Medical School, 1974-75

Grouping by Tuition of Medical School	Average Income	Non-Institutional Sources of Income*									
		Total Non-Institutional Sources		Student		Spouse		Parents & Relatives†		Other Non-Institutional Sources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All Schools	$8,960	$6,446	71.9	$1,488	16.6	$2,129	23.8	$1,400	15.6	$1,431	16.0
1st Quartile	10,254	7,170	69.9	1,464	14.3	1,817	17.7	2,182	21.3	1,707	16.6
2nd Quartile	8,724	6,112	70.1	1,395	16.0	2,113	24.2	1,259	14.4	1,345	15.4
3rd Quartile	8,484	6,432	75.8	1,529	18.0	2,438	28.7	1,035	12.2	1,430	16.9
4th Quartile	8,259	6,081	73.6	1,575	19.1	2,228	27.0	1,033	17.0	1,245	15.1

+ In-state tuition.

* For itemized information on these sources, see Appendix C.

† These only include parents and relatives of the student but not the spouse nor in-laws of the student.

account for a greater proportion of student income in schools where tuition was lower.

Table 23 demonstrates that average income received from parents was highest ($2,182) for students in schools with the highest tuition. Average income from this source for students in the other three quartiles ranged from $1,033 to $1,259. Spouses, on the other hand, supplied the least amount of income to students in the highest-tuition schools, and the greatest amount to students in the third- and fourth-quartile schools. In addition, this table indicates that the proportion of funds derived from the students' own resources, such as earnings and savings, increased as the level of tuition increased.

In absolute amount, students in schools with higher tuition levels averaged more income from most of the categories in Table 24. Exceptions to this are: (1) student earnings (from which students in the second and third quartiles averaged about $800 while those in the first and fourth quartiles averaged less than $675), and (2) other resources (from which students in the second and third quartiles averaged less than $1,625 and those in the first and fourth quartiles averaged more than $1,775). Differences between schools were greatest in the case of contributions, from which students in first-quartile schools averaged

Table 24

Average Student Income From Earnings, Contributions, Loans and Scholarships by Tuition+ of Medical School, 1974-75

Grouping by Tuition of Medical School	Average Income	TYPE OF INCOME*											
		Student Earnings		Contributions†		Guaranteed Loans		Other Loans		Non-Repayable Funds		Other Resources	
		Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
All Schools	$8,960	$745	8.3	$3,995	44.6	$613	6.8	$708	7.9	$1,192	13.3	$1,707	19.1
1st Quartile	10,244	634	6.2	4,579	44.7	960	9.4	865	8.4	1,259	12.3	1,957	19.1
2nd Quartile	8,724	801	9.2	3,816	43.7	620	7.1	726	8.3	1,266	14.5	1,495	17.1
3rd Quartile	8,434	863	10.2	3,954	46.6	414	4.9	608	7.2	1,029	12.1	1,616	19.0
4th Quartile	8,259	673	8.1	3,622	43.8	402	4.9	606	7.3	1,170	14.2	1,786	21.6

+ In-state tuition.

* See Appendices B and C for more detail on how these types were constructed.

† These include contributions from spouse, from the student's parents and relatives, and from the student's in-laws.

$4,579 and students from fourth-quartile schools averaged $3,622. From all types of loans, students in schools with higher tuition rates (first quartile) again averaged more than students in other schools.

Proportionately, the income received from various sources are generally similar for students in schools with different quartiles. Once exception concerns guaranteed loans, from which students in the higher-tuition schools tended to receive relatively more than students in lower-tuition schools. This proportion, lowest for third- and fourth-quartile schools (4.9 percent), increases with tuition to 9.4 percent for first-quartile schools. No other type of income rises or decreases as consistently.

Table 25 presents average expenses by quartile. For first-quartile students, average tuition was $3,479, constituting 40.5 percent of student expenses. Students in fourth-quartile schools had an average tuition of $833, which constituted only 13.8 percent of their expenses. Since medical students spent relatively similar amounts of money on room and board and other living expenses, students in high-tuition schools had to increase their income over those in low-tuition schools by some $2,500 in order to meet expenses.

Table 25

Average Student Expenses by Tuition+ of Medical School, 1974-75

Grouping by Tuition of Medical School (1)	Average Expenses (2)	Educational Expenses				Personal Expenses			
		Tuition & Fees		Other		Room & Board		Other*	
		Amount (3)	Percent (4)	Amount (5)	Percent (6)	Amount (7)	Percent (8)	Amount (9)	Percent (10)
All Schools	$7,051	$1,984	28.1	$385	5.5	$2,650	37.6	$2,031	28.8
1st Quartile	8,593	3,479	40.5	422	4.9	2,749	32.0	1,942	22.6
2nd Quartile	7,064	2,078	29.4	381	5.4	2,565	36.3	2,041	28.8
3rd Quartile	6,304	1,354	21.5	355	5.6	2,579	40.9	2,017	32.0
4th Quartile	6,030	833	13.8	377	6.3	2,699	44.8	2,122	35.2

* These include expenses for clothing, health care, transportation, and other miscellaneous items.

\+ In-state tuition.

IV. SUMMARY AND CONCLUSIONS

For the total sample of medical students enrolled for academic year 1974-75, major findings relative to their income and expenses are as follows:

1. Institutional sources (non-repayable funds/scholarships or loans) provided approximately 28 percent of total student income. The remainder of that income was derived from a variety of sources, including the students' own resources (16.6 percent), those of his/her spouse (23.8 percent), and contributions from parents and relatives (15.6 percent).

2. Of the major institutions providing financial aid to students, the federal government funded the largest proportion (13.3 percent). Banks and medical schools ranked second (with 6.4 percent) and third (with 4.2 percent) respectively.

3. Tuition accounted for approximately 28 percent of student expenses during 1974-75, with room and board (38 percent) and other living and schooling costs accounting for the remainder (34 percent).

With these general results as a baseline, the major findings on the relationships between medical student income/expenses and the characteristics of the medical schools can be summarized as follows:

1. Generally, medical school size (i.e., number of students enrolled) was positively related to student income. Students in the larger schools tended to depend more on their own financial resources as well as contributions from spouses, parents, and other relatives. On the other hand, students in the smaller schools tended to depend relatively

more on institutional forms of aid such as scholarships/non-repayable funds or loans.

2. Overall, students in schools more oriented towards research had larger incomes and expenses. Institutional funds, particularly those from the medical school, were more important for students in such schools. In schools with less research orientation, non-institutional sources--particularly the student's spouse--were relatively more important sources.

3. For students in schools with higher dependence on endowments/gifts and sponsored research revenues, institutional sources of aid, particularly loans, were relatively important in providing income for the student. Medical schools were particularly instrumental in providing aid for students in schools with these funding patterns. Of non-institutional funds, relatives and parents were more important for students in these schools. On the other hand, for students in schools with less dependence on endowments/gifts and sponsored funds for research (and more dependent on funds from tuitions, state appropriations, and sponsored funds for teaching and training), spouses were the most important source of student income.

4. Students in schools that were relatively autonomous from public control generally had larger incomes as well as larger expenses. For such students, institutional sources, particularly banks and medical schools, were relatively more important in supplying income. Of non-institutional sources, parents and other relatives were comparably more important for these students. In the least autonomous schools, non-institutional aid, particularly contributions from the spouse, were of relatively greater importance to the students.

5. Students in schools with higher tuition rates were found to have higher incomes and expenses than those in lower-tuition institutions. Tuition accounted for approximately two-fifths of student expenses in high-tuition schools as compared with 14 percent for those in the lowest-tuition category. Students in higher-tuition schools tended to be relatively more dependent on institutional funds, particularly loans. Banks and medical schools were relatively more important in supplying such funds. In addition to

these funds, students from high-tuition schools were relatively more dependent on their parents and relatives. On the other hand, in schools with lower tuitions, the student's spouse was more important as a source of income, as was the student's own earnings.

6. The amount of indebtedness expected upon graduation was higher for students in schools that were more autonomous from public control and had higher tuitions. This indebtedness was also generally higher for students attending schools which had a large number of undergraduate medical students and which were dependent on revenue from private endowments/gifts and from sponsored research funds.

From the above findings, certain basic patterns are apparent regarding the relationship of medical school characteristics to student financing. Generally, students had higher average incomes and total expenses in schools that were more strongly oriented toward research, more dependent on endowments/gifts and sponsored-research revenues, and more autonomous from public control (i.e., more "privately controlled"). Tuition seemed to be the most important determinant of differences in student expenses from school to school, since living expenses did not vary greatly. In addition, students in such schools depended more on institutional aid, particularly on loans, with the medical schools and banks as primary suppliers of such funds. There was also a higher dependence on parents and other relatives and less relative dependence on spouses and on the student's own earnings.

On the other hand, students in schools not conforming to the above descriptions had lower expenses and needed less income. These students tended to depend relatively more on non-institutional funds and particularly on spouse's income. In addition, they were more likely to defray more of the costs of their educations themselves.

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APPENDIX A

COMPOSITION OF NATIONAL SAMPLE BY SCHOOL

APPENDIX A

Composition of National Sample by School
(Listed alphabetically by state)

Medical School	National Sample (Number of Questionnaires) Monitored*	Non-Monitored	Total
Alabama			
Univ. of Alabama	3	57	60
Univ. of South Alabama	3	20	23
Arizona			
Univ. of Arizona	4	38	42
Arkansas			
Univ. of Arkansas	8	62	70
California			
Univ. of California			
Davis	5	56	61
Irvine	5	37	42
Los Angeles	10	80	90
San Diego	1	40	41
San Francisco	0	86	86
Loma Linda Univ.	0	88	88
Univ. of Southern California	5	66	71
Stanford Univ.	8	50	58
Colorado			
Univ. of Colorado	10	68	78
Connecticut			
Univ. of Connecticut	0	34	34
District of Columbia			
Georgetown Univ.	6	97	103
George Washington Univ.	8	79	87
Howard Univ.	0	65	65
Florida			
Univ. of Florida	0	53	53
Univ. of Miami	0	11	11
Univ. of South Florida	3	19	22
†Florida State Univ.	1	4	5
Georgia			
Emory Univ.	8	55	63
Med. Coll. of Georgia	3	89	92
Hawaii			
Univ. of Hawaii	0	41	41
Illinois			
Univ. of Chicago-Pritzker	6	62	68
Chicago Medical	0	57	57
Univ. of Illinois	6	168	174
Loyola Univ.	7	52	59
Illinois—(cont'd)			
Northwestern Univ.	0	95	95
Rush Med. Coll.	3	40	43
Southern Illinois Univ.	2	17	19
Indiana			
Indiana Univ.	0	122	122
Iowa			
Univ. of Iowa	0	98	98
Kansas			
Univ. of Kansas	8	66	74
Kentucky			
Univ. of Kentucky	0	62	62
Univ. of Louisville	5	75	80
Louisiana			
Louisiana State Univ.			
New Orleans	7	81	88
Shreveport	0	14	14
Tulane Univ.	9	80	89
Maryland			
Johns Hopkins	7	64	71
Univ. of Maryland	2	91	93
Massachusetts			
Boston Univ.	9	67	76
Univ. of Massachusetts	0	23	23
Tufts Univ.	0	62	62
Michigan			
Michigan State Univ.	8	48	56
Univ. of Michigan	0	142	142
Wayne State Univ.	8	137	145
Minnesota			
Mayo Medical School	2	16	18
Univ. of Minnesota			
Duluth	0	9	9
Minneapolis	17	128	145
Mississippi			
Univ. of Mississippi	15	59	74
Missouri			
Univ. of Missouri			
Columbia	4	61	65
Kansas City	3	21	24

(cont'd)

Medical School	National Sample (Number of Questionnaires) Monitored*	Non-Monitored	Total
Missouri—(cont'd)			
Washington Univ.—St. Louis	1	80	81
Nebraska			
Creighton Univ.	6	60	66
Univ. of Nebraska	6	74	80
Nevada			
Univ. of Nevada	0	14	14
New Hampshire			
Dartmouth Med. School	0	24	24
New Jersey			
College of Med. & Den. New Jersey	2	69	71
Rutgers	0	44	44
New Mexico			
Univ. of New Mexico	2	38	40
New York			
Albany Medical Coll.	4	60	64
Albert Einstein Coll. of Med.	3	70	73
Columbia Univ.	1	85	86
Cornell Univ.	0	62	62
Mount Sinai	3	39	42
New York Medical Coll.	0	91	91
New York Univ.	0	99	99
Univ. of Rochester	3	56	59
State Univ. of N.Y.			
Buffalo	0	81	81
Downstate	0	85	85
Upstate	1	71	72
North Carolina			
Bowman Gray	0	52	52
Duke Univ.	0	69	69
°East Carolina Univ.	1	2	3
Univ. of North Carolina	8	63	71
North Dakota			
Univ. of North Dakota	4	22	26
Ohio			
Case Western Reserve Univ.	6	80	86
Univ. of Cincinnati	0	83	83
Med. Coll. of Ohio at Toledo	1	29	30
Ohio State Univ.	15	94	109
Oklahoma			
Univ. of Oklahoma	5	84	89

Medical School	National Sample (Number of Questionnaires) Monitored*	Non-Monitored	Total
Oregon			
Univ. of Oregon	5	61	66
Pennsylvania			
Hahneman Med. Coll.	0	81	81
Jefferson Med. Coll.	12	120	132
Med. Coll. of Pennsylvania	6	48	54
Pennsylvania State Univ.	0	49	49
Univ. of Pennsylvania	12	86	98
Univ. of Pittsburgh	9	68	77
Temple Univ.	0	99	99
Rhode Island			
Brown Univ.	1	35	36
South Carolina			
Med. Univ. of South Carolina	0	60	60
South Dakota			
Univ. of South Dakota	4	15	19
Tennessee			
Meharry Med. Coll.	1	61	62
Univ. of Tennessee	11	80	91
Texas			
Baylor Coll. Med.	11	76	87
Texas Tech. Univ.	0	20	20
University of Texas			
Dallas (Southwestern)	0	94	94
Galveston	0	102	102
Houston	1	21	22
San Antonio	4	66	70
Virginia			
Eastern Virginia Med. School	1	8	9
Med. Coll. of Virginia	10	77	87
Univ. of Virginia	4	68	72
Washington			
Univ. of Washington	9	65	74
West Virginia			
West Virginia Univ.	6	44	50
Wisconsin			
Med. Coll. of Wisconsin	8	65	73
Univ. of Wisconsin	6	82	88
Puerto Rico			
Univ. of Puerto Rico	0	47	47
TOTAL	417	6,844	7,261

*Questionnaires for the monitored subsample were screened by school officials to check the accuracy of student responses

†Combined with Florida for most AAMC reports

°Combined with North Carolina for most AAMC reports

APPENDIX B

SURVEY INSTRUMENT

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APPENDIX B
ASSOCIATION OF AMERICAN MEDICAL COLLEGES
SURVEY OF HOW MEDICAL STUDENTS FINANCE THEIR EDUCATION

DIRECTIONS: Please answer all questions by checking the appropriate box or entering the correct figures as indicated. Results of this survey will be used to identify critical problems in financing of medical school education, so it is important that you answer as frankly and accurately as you can and estimate where exact values are not available. When you have completed the questionnaire, return it in the enclosed envelope. No postage is necessary.

CONFIDENTIALITY: The identification number on your questionnaire is needed by the project staff to process returned questionnaires. You in no way can be identified as an individual and your answers will be strictly anonymous.

I. BIOGRAPHICAL

Information in this section will be used to examine relationship between financial needs and selected background characteristics. Please answer all questions carefully and completely.

1. State of legal residence _____

2. Date entered medical school ____ ____ (MO YR)

3. Date expected to receive M.D. degree: ____ ____ (MO YR)

4. Class level:

   Length of program in which you are now enrolled (years): ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

   Current year: ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

5. Age: ____ 6. Sex: Male ☐1 Female ☐2

7. Marital Status:

   Never Married ☐1 Married ☐2 Widowed ☐3
   Divorced ☐4 Separated ☐5

8. Number of (your own) children:

   ☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 or more

   Number of other dependents (excluding yourself and your spouse): ☐0 ☐1 ☐2 ☐3 or more

9. Citizenship: U.S. ☐1 Permanent resident visa ☐2
   ☐3 Other (specify) _____

10. Self-Description:

- ☐ 1. Black/Afro-American
- ☐ 2. American Indian
- ☐ 3. White/Caucasian
- ☐ 4. Mexican/American or Chicano
- ☐ 5. Oriental/Asian-American
- ☐ 6. Puerto Rican (Mainland)
- ☐ 7. Puerto Rican (Commonwealth)
- ☐ 8. Cuban
- ☐ 9. Other (specify) _____

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11. Parents' occupation during major part of 1974 (if deceased or retired, mark under "a" and indicate under "b" major occupation prior to retirement or death).

	Father	Mother
a. Retired	1 ☐	1 ☐
Deceased	2 ☐	2 ☐
b. Clerical worker	1 ☐	1 ☐
Farmer, farm manager	2 ☐	2 ☐
Farm foreman, farm laborer	3 ☐	3 ☐
Health worker — dentist, optometrist, pharmacist, podiatrist, veterinarian	4 ☐	4 ☐
Health worker—physician (M.D., D.O.)	5 ☐	5 ☐
Health worker—other than above	6 ☐	6 ☐
Homemaker	7 ☐	7 ☐
Owner, manager, administrator (non-farm)	8 ☐	8 ☐
Professional, non-health-related (e.g., clergyman, engineer, lawyer, teacher, etc.)	9 ☐	9 ☐
Sales worker	10 ☐	10 ☐
Skilled worker, craftsman	11 ☐	11 ☐
Transport or equipment operator	12 ☐	12 ☐
Unskilled worker, laborer, private household worker (non-farm)	13 ☐	13 ☐

12. Parent's **highest** education level:

	Father	Mother
Eighth grade or less	1☐	1☐
Some high school	2☐	2☐
Completed high school	3☐	3☐
Specialized business or technical training	4☐	4☐
Some college	5☐	5☐
Completed college	6☐	6☐
Some graduate or professional school	7☐	7☐
Completed graduate or professional school	8☐	8☐

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13. Number of individuals other than yourself who are dependent on your parents for financial support: ____

14. Parents' estimated gross income for 1974:

1 ☐ Less than $5,000
2 ☐ $ 5,000 - 7,499
3 ☐ $ 7,500 - 9,999
4 ☐ $10,000 - 12,499
5 ☐ $12,500 - 14,999
6 ☐ $15,000 - 19,999
7 ☐ $ 20,000 - 24,999
8 ☐ $ 25,000 - 29,999
9 ☐ $ 30,000 - 49,999
10 ☐ $ 50,000 - 99,999
11 ☐ $100,000 - or more

15. Where did you spend the major portion of your pre-college years? (Mark only one that *best* describes the area.)

☐ 1 Large City (population 500,000 or more)
☐ 2 Suburb of a large city
☐ 3 City of moderate size (population 50,000-500,000)
☐ 4 Small city (population 10,000 - 50,000)
☐ 5 Small town (population less than 10,000)
☐ 6 Farm, rural or unincorporated area

NOTE: Because your answers regarding resources, expenses and indebtedness are critical to the validity of this survey, please enter your responses carefully in Sections II, III and IV. For example, the entry for $1500.00 should be $|1|5|0|0|.00 and not $|1|5|0|0|0|.00 or $|1|5|0|.00

II. RESOURCES

Information in this section will be used to summarize the resources which are currently available to medical students for education and living. Please estimate as accurately as you can the amounts of money you received or expect to receive from any source **during the current year** (July 1, 1974 to June 30, 1975).

16. Did you apply for financial aid for the current school year via your medical school? ☐ 1 Yes ☐ 2 No

Did you apply for financial aid for the current school year via other sources? ☐ 1 Yes ☐ 2 No

Show below the amounts of money which have become or will be available to you to meet your expenses in the year beginning July 1, 1974 and ending June 30, 1975. (Please indicate in whole dollars).

Earnings and Income Before Taxes
(July 1, 1974 to June 30, 1975)

17. Your earnings—from employment $|_____.00
18. Armed Forces active duty or reserve pay $|_____.00
19. Spouse's earnings/income $|_____.00
20. Income from savings, trusts, stocks, bonds, investments. $|_____.00
21. Other earnings (specify) $|_____.00

Gifts (July 1, 1974 to June 30, 1975)

22. Parents' and relatives' contributions $|_____.00
23. Spouse's parents' and/or relatives' contributions $|_____.00
24. Other Gifts (Specify) _____ $|_____.00

Scholarships, Grants, and Other Non-Repayable Funds
(July 1, 1974 to June 30, 1975)

25. Federal Health Professions Scholarship Program $|_____.00
26. Robert Wood Johnson Scholarship $|_____.00
27. Grant(s) from school funds (Including tuition remission or waiver) $|_____.00
28. Veterans benefits $|_____.00
29. Public Health Service Scholarship $|_____.00
30. Physician Shortage Area Scholarship $|_____.00
31. Armed Forces Health Professions Scholarship Program $|_____.00
32. NIH-supported research fellowship or traineeship, research grant, clinical fellowship, etc. $|_____.00
33. State/State Medical Society Scholarship $|_____.00
34. Other (specify) _____ $|_____.00

Loans and Other Repayable Funds
(July 1, 1974 to June 30, 1975)

35. Federal Health Professions Student Loan $|_____.00
36. National Direct Students Loan/ National Defense Education Student Loan $|_____.00
37. Guranteed school loan (where the school is the authorized lender) $|_____.00
38. School loan (not guaranteed by state or federal government) $|_____.00
39. Robert Wood Johnson Loan $|_____.00
40. Private bank loan (not guaranteed by state or federal government) $|_____.00
41. Guaranteed (insured) student bank loan $|_____.00
42. American Medical Association Education and Research Foundation (AMA-ERF) loan $|_____.00

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43. Family loan $| | | | | | .00

44. Personal loan (from an individual other than family) $| | | | | | .00

45. Other (specify) _____ $| | | | | | .00

Other Resources

46. Any other resources you have available for meeting medical school expenses for the 1974-75 school year (e.g. trusts, savings accounts, etc.) (Specify)_____ $| | | | | | .00

_____ $| | | | | | .00

_____ $| | | | | | .00

_____ $| | | | | | .00

III. ANNUAL EXPENSES

Please estimate as accurately as you can the total amount (in dollars) that you have spent or expect to spend for yourself and your dependents during the year beginning July 1, 1974 and ending June 30, 1975.

Education Expenses (Your Own)

47. Tuition and Fees $| | | | | | .00

48. Books, Instruments and Equipment $| | | | | | .00

Other Expenses (Yours and Dependents)

49. Lodging (rent, house payment, home maintenance, etc.) $| | | | | | .00

50. Food $| | | | | | .00

51. Clothing $| | | | | | .00

52. Health Care $| | | | | | .00

53. Transportation (including auto expenses) $| | | | | | .00

54. Other Expenses (entertainment, spouses' educational expenses, taxes, etc.) $| | | | | | .00

IV. INDEBTEDNESS

55. Home loan mortgage (if any) $| | | | | | .00

Please estimate your total indebtedness in dollars (excluding home mortgage):

56. Total Indebtedness upon entrance to medical school $| | | | | | .00

57. Current indebtedness (as of June 30, 1975) $| | | | | | .00

58. Anticipated indebtedness upon graduation (based on current school costs) $| | | | | | .00

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V. EMPLOYMENT

Please indicate employment (if any) during the 1974-75 school year.

59. Average number of hours per week you worked during school vacation |____|

60. Average number of hours per week you worked while actually attending school |____|

61. Average number of hours per week your spouse worked |____|

VI. CAREER PLANS

Your answers in this section will provide information regarding relationships between career plans and student financing. Although your plans may be somewhat tentative at this time, please be as specific as you can in indicating your present plans or preferences for your future career.

62. Please indicate the type of **activity** listed below to which you plan to devote the majority of your medical career. (Mark only one)

- ☐ 1. Patient care
- ☐ 2. Research
- ☐ 3. Teaching
- ☐ 4. Administration
- ☐ 5. Other (specify) _____
- ☐ 6. Undecided

63. Please indicate the type of **environment** you now contemplate for the majority of your medical career. (Mark only one.)

- ☐ 1. Individual practice
- ☐ 2. Partnership practice
- ☐ 3. Private group practice
- ☐ 4. Hospital-based group practice (except federal)
- ☐ 5. Academic health center
- ☐ 6. Federal government service
- ☐ 7. Public health (except federal)
- ☐ 8. Industrial
- ☐ 9. Other (specify) _____
- ☐ 10. Undecided

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64. Please indicate your present plans concerning **specialization** by choosing one of the following: (Mark only one.)

- ☐ 1. Anesthesiology
- ☐ 2. Basic Medical Science
- ☐ 3. Family Medicine/General Practice
- ☐ 4. Internal Medicine – general
- ☐ 5. Internal Medicine – subspecialty
- ☐ 6. Obstetrics/Gynecology
- ☐ 7. Ophthalmology
- ☐ 8. Otolaryngology
- ☐ 9. Pathology
- ☐ 10. Pediatrics – general
- ☐ 11. Pediatrics – subspecialty
- ☐ 12. Psychiatry/Child Psychiatry
- ☐ 13. Public health/Preventive medicine
- ☐ 14. Radiology
- ☐ 15. Surgery – general
- ☐ 16. Surgery – subspecialty
- ☐ 17. Other known specialty (specify)_____
- ☐ 18. Plan to Specialize – Specialty Not Known
- ☐ 19. Undecided

65. How many years do you presently plan in residency/intern training?

☐ 1 ☐ 4
☐ 2 ☐ 5
☐ 3 ☐ 6
☐ Unknown

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66. Please indicate the type of area in which you are currently most interested in eventually locating (after completing military or other required service).

(Mark only **one** that best describes the area.)

- ☐ 1. Large city (population 500,000 or more)
- ☐ 2. Suburb of a large city
- ☐ 3. City of moderate size (population 50,000 to 500,000)
- ☐ 4. Small city (population 10,000 to 50,000)
- ☐ 5. Small town (population less than 10,000)
- ☐ 6. Rural/unincorporated area
- ☐ 7. Undecided

67. Are you interested in locating (other than to fulfill service commitment) in a critically underserved area (current DHEW definition of physician shortage area includes primary care physicians to population ratio of less than 1 to 4,000)?

☐ Yes 1 ☐ No 2

If yes, please indicate preferred nature of area:

- ☐ Rural 1
- ☐ Urban 2
- ☐ No preference 3

VII. **COMMENTS** Enter any comments you may wish to make regarding the financing of your medical education:

APPENDIX C

CLASSIFICATION OF FINANCIAL AID BY SOURCE AND TYPE OF AID

APPENDIX C

Classification of Financial Aid by Source and Type of Aid
Reported on Survey of How Medical Students Finance Their Education, 1974-75

Questionnaire Item	Name of Aid Program	Source of Aid	Type of Aid	Administrator of Aid*
25	Federal Health Professions Scholarship	Federal	Scholarship/Non-Repayable	School
26	Robert Wood Johnson Scholarship	Foundation	Scholarship/Non-Repayable	School
27	Grant(s) from school funds (including tuition remission or waiver)	School	Scholarship/Non-Repayable	School
28	Veteran's Benefits	Federal	Scholarship/Non-Repayable	Other
29	Public Health Service Scholarship	Federal	Scholarship/Non-Repayable	Other
30	Physician Shortage Area Scholarship	Federal	Scholarship/Non-Repayable	Other
31	Armed Forces Health Professions Scholarship Program	Federal	Scholarship/Non-Repayable	Other
32	NIH-supported research fellowship or traineeship, research grant, clinical fellowship, etc.	Federal	Scholarship/Non-Repayable	Other
33	State/State Medical Society Scholarship	State §	Scholarship/Non-Repayable	Usually Other
34 †	National Medical Fellowships	Foundation	Scholarship/Non-Repayable	Other
35	Federal Health Professions Student Loans	Federal	Loans (Not Guaranteed)	School
36	National Direct Student Loan/ National Defense Education Student Loan	Federal	Loans (Not Guaranteed)	School
37	Guaranteed school loan (where school is authorized lender)	School	Loans (Guaranteed)	School
38	School loan (not guaranteed by state or federal government)	School	Loans (Not Guaranteed)	School
39	Robert Wood Johnson Loan	Foundation	Loans (Not Guaranteed)	School
40	Private bank loan (not guaranteed by state or federal government)	Bank	Loans (Not Guaranteed)	Other
41	Guaranteed (insured) student bank loan	Bank	Loans (Guaranteed)	Other
42	American Medical Association Education and Research Foundation (AMA-ERF) loan	Foundation	Loans (Not Guaranteed)	Other
45	Other (state)	State	Loans (Not Guaranteed)	Usually Other

* School = Medical School; Other = Other than medical school

† National Medical Fellowships were separated from other responses to this item.

§ These were classified as state because of the small financial role played by state medical society scholarships.

APPENDIX D

CLASSIFICATION OF NON-INSTITUTIONAL INCOME BY SOURCE AND TYPE OF AID

APPENDIX D

Classification of Non-Institutional Income by Source and Type of Aid Reported on Survey of How Medical Students Finance Their Education, 1974-75

Questionnaire Item	Name of Resource	Source of Aid	Type of Aid
17	Student earnings from employment	Student	Earnings
18	Armed Forces Active duty or reserve pay	Student	Other
19	Spouse's earnings/income	Spouse	Contributions
20	Income from savings, trusts, stocks, bonds, investments	Student	Other
21	Other earnings	Student	Other
22	Parents and relatives	Parents and relatives	Contributions
23	Spouse's parents and/or relatives	Other	Contributions
24	Other gifts	Other	Other
43	Family loan	Other	Other
44	Personal loan	Other	Other
45	Other Personal	Other	Other
46	Other Resources	Other	Other

APPENDIX E

PROCEDURES OF SELECTING MEASURES OF MEDICAL SCHOOL CHARACTERISTICS

(63)

Appendix E

Procedures for Selecting Measures of Medical School Characteristics

The selection of medical school characteristics used in this study involved a number of preliminary analyses. These analyses used a number of characteristics which were identified in previous attempts to classify medical schools, including measures related to: (1) medical school size and affluence, (2) research vs. practice orientation, (3) medical school location, (4) degree of public control exerted over the medical school, (5) tuition of medical school, and (6) the financial structure of the school.

The approach in the preliminary analyses was to assess the utility of using composite (rather than single) measures of each of the above six characteristics. Principal components analysis was used to obtain the composite measures and to determine whether a derived composite measure reflected the proposed characteristic. If this measure did not resemble the proposed characteristic or was uninterpretable, a measure using a single variable was substituted.

Medical School Size and Affluence

One important characteristic that was identified by previous studies was size of medical school. Measures of size include: (1) number of undergraduate medical students, (2) number of other students, (3) number of faculty members, and (4) amount of budget per faculty member.

A composite measure, derived from principal components analysis, consists primarily of the first three variables, which are indicators of the number of individuals associated with the school rather than budget of the school. If used, this measure might have presented problems of interpretation since the relationship between this global measure of size and medical student funding could be influenced by a complex interaction of the three component variables. In order to properly use such a measure, some knowledge of how each component variable works relative to student financing is required. Such knowledge at this time is lacking. To avoid complications arising from the use of such a composite measure, the decision was made to use a single indicator of size that would be most directly related to medical school financing. The selected indicator was the number of enrolled undergraduate medical students.

Research Orientation of Medical School

A major dimension describing differences between medical schools contrasts schools with relatively more research/academic emphasis to those with more clinical emphasis. In preliminary analyses, the following variables were used to distinguish between schools with different orientations: (1) percent of budget expended on research, (2) percent of faculty without an M.D., (3) ratio of Ph.D. to M.D. candidates, (4) the presence of ambulatory care programs, (5) the percent of graduates in general practice, and (6) the percent of graduates in medical specialty. The results of these analyses were weakened by the relatively large number of schools for which data were missing. This was particularly evident in those recently established schools which have not yet graduated students in any number. Because of these problems a substitute measure, the proportion of the budget spent on research, was used.

Medical School Location

A third measure was the medical school's location--which included the regional location and the population density of the city in which the school is located. In combination, these variables were expected to be related to the costs of attending schools in certain areas. A principal components analysis revealed the following: schools in the northeast were located in the most densely populated areas; schools in the south, in the least densely populated areas; and schools in the west and midwest, in cities ranging from small urban areas to very populous areas. These results indicated that the derived composite measure distinguished between schools in the northeast and south on the basis of population density. Schools in the midwest and west, being located in cities from a wide population density range, would obscure potential relationships between this measure and medical student finance variables. Because of these problems with the composite variable and the inability of either separate variable to adequately measure the costs of attending school, the "location" characteristic was dropped from the analysis.

Degree of Public Control Exerted Over the Medical School

Traditionally, schools have been classified as private or public depending on their source of revenue. In recent years, however, public support for private schools has increased, thereby reducing the differences between these two types of school. In this study, an attempt

was made to construct a composite measure reflecting the degree to which each school conformed to the public or private designation.

The three variables used to form this measure are: (1) proportion of revenues from state appropriations, (2) ratio of in-state to out-of-state tuitions, and (3) ratio of in-state to out-of-state students. For the first of these variables, the expectation was that public schools would be highly dependent on funds from the state, with private schools being less dependent.

The ratio of in-state to out-of-state tuitions reflects the benefits that are given by public schools to in-state students in the form of lower tuitions. This ratio theoretically ranges from zero (for public schools with zero in-state tuition) to one (in cases where in-state and out-of-state tuitions are equal). The ratio of in-state to out-of-state students, the third measure, expresses the growing interest of private schools in enrolling in-state students--an interest which is in most cases financial, since some private schools receive state funds for each in-state student enrolled.

The results of the principal components analysis for these control-of-school variables are given in Table E-1. The composite measure (first principal component) correlated with the control-of-school variables in the following ways:

(a) high and positive for the revenues from state appropriations;

(b) high and negative for the in-state to out-of-state tuition ratio, and

(c) moderate and positive for the in-state to out-of-state student ratio.

To assess the reliability of this measure, the number of private and public schools in the quartiles determined by the composite variable was compared with the self-classification of the schools. In the first quartile, all 29 schools were private; 16 of the 28 schools in the second quartile were private; 2 of the 28 schools in the third quartile were private, and only 1 of the 30 schools in the fourth quartile was self-described as private.

Tuition of Medical School

Although it is probable that the costs of attending medical school are higher for students paying more tuition, the degree to which these greater costs require students to change their approaches to obtaining financial aid is not so obvious. To ascertain whether totally different

Table E-1

Results of the Unrotated Principal Components Analysis

On Variables Related to Control of School

Variable (1)	Loading on First Principal Component (2)	Commonality (3)
Proportion of revenue from state appropriations	.86	.75
Ratio in-state/out-of-state tuitions	-.87	.76
Ratio in-state/out-of-state students	.44	.19
Eigenvalue	1.70	
Proportion of variance explained	56.6 percent	

funding patterns are found for students in high- and low-tuition schools, in-state tuition was utilized as the single most representative measure of the costs associated with attending specific schools.

Financial Structure of Medical School

As a final characteristic, financial structure was conceptualized as the pattern describing the sources of revenues for particular medical schools. It was expected that the patterns for private and public schools would differ, although with the increasing availability of public funds to private schools, such differences might be lessened.

Table E-2

Results of the Unrotated Principal Components Analysis

On Variables Related to Revenue Pattern of School

Variable (Proportion of Revenues from) (1)	Loading on First Principal Component (2)	Loading on Second Principal Component (3)	Commonality (4)
Tuition/fees	.58	.67	.79
State appropriations	.90	.04	.82
Endowments/gifts	-.28	.79	.72
Sponsored research	-.60	.57	.69
Sponsored teaching	.52	.26	.33
Eigenvalue	1.85	1.47	
Proportion of variance explained	37.0%	29.3%	

Table E-2 gives the results of a principal components analysis of the proportion of revenues obtained from the following five sources: (1) tuition and fees, (2) state appropriations, (3) endowments and gifts, (4) funds for sponsored research, and (5) funds for sponsored teaching and training. Two principal components with eigenvalues greater than 1 were identified. The first of these components explained 37 percent of the variance of the five variables, while the second explained 29.3 percent. Two basic types of schools are identified. First, there are schools which are highly dependent on revenues from (1) tuition and fees, (2) state appropriations, and (3) sponsored teaching and research. The second type of school is highly dependent on (1) endowments and gifts, and (2) funds for sponsored research.

Results for the second principal components reveal still another pattern. This component shows a grouping of schools with high proportion of revenues from tuition, endowments, and funds for sponsored research, and another grouping of schools dependent on state appropriations and sponsored teaching funds. The difference between this component and the first is that tuition is included as a relatively important source of revenue for some schools dependent on endowments/ gifts and sponsored research.

Both principal components reveal interesting contrasts between schools relative to how they obtain revenues. However, only the first and most important component was selected for this report.

APPENDIX F

RANK AND QUARTILE OF MEDICAL SCHOOL BY THE NUMBER OF STUDENTS ENROLLED IN THE 1974-75 ACADEMIC YEAR

(71)

APPENDIX F

Rank and Quartile of Medical Schools by the Number of Students Enrolled in the 1974-75 Academic Year*

Rank	Medical School	Number of Students
	FIRST QUARTILE	
1	Indiana	1169
2	Illinois	1159
3	Wayne State	968
4	Minnesota - Minneapolis	966
5	Michigan State	949
6	Jefferson	891
7	SUNY - Downstate	862
8	Georgetown	811
9	Texas - Galveston	735
10	Ohio State	729
11	Temple	718
12	Harvard	669
13	New York University	658
14	University of Pennsylvania	656
15	Iowa	650
16	New York Medical	646
17	South Carolina	645
18	Northwestern	636
19	Hahnemann	627
19	Texas - Southwestern	627
21	Maryland	620
22	Med Col of Georgia	616
23	Tennessee	606
23	Tufts	606
25	Calif-Los Angeles	601
26	St. Louis	599
27	Oklahoma	595
28	Tulane	593
29	LSU-New Orleans	587
	SECOND QUARTILE	
30	Loma Linda	586
31	Univ of Wisconsin	584
32	George Washington	582
33	Albert Einstein	579
34	Med Col of Virginia	578
35	Baylor	577
36	Calif-San Francisco	576
36	Columbia	576
38	Case Western Reserve	570
39	Miami	562
40	Cincinnati	556
41	Washington Univ-St. Louis	541
42	SUNY-Buffalo	540
43	Nebraska	534
44	Louisville	530
45	Colorado	521
46	Pittsburgh	514
47	Boston	504
48	Univ of Washington-Seattle	495
49	Kansas	490
49	Mississippi	490
51	Med Col of Wisconsin	487
52	Howard	479
52	SUNY-Upstate	479
54	Virginia	478
55	Johns Hopkins	476
56	North Carolina	474
57	CMDNJ-New Jersey	473
57	Texas-San Antonio	473
	THIRD QUARTILE	
59	Southern California	472
60	Arkansas	468
61	Duke	462
62	Puerto Rico	454
63	Univ of Chicago	453
64	Oregon	440
65	Creighton	439
66	Missouri-Columbia	435
67	Albany	428
68	Emory	421
69	Yale	419
70	Cornell	414
71	Kentucky	413
72	Meharry	410
73	Calif-Davis	404
74	Alabama-Birmingham	403
75	Utah	399
76	Rochester	395
77	Loyola	391
78	Stanford	388
79	Chicago Medical	382
80	Michigan State	376
81	Med Col of Pennsylvania	360
82	Florida	355
83	West Virginia	335
84	Penn State	328
85	Vanderbilt	326
86	Vermont	322
	FOURTH QUARTILE	
87	CMDNJ-Rutgers	290
88	Rush	284
89	Mt. Sinai	282
90	Calif-Irvine	281
91	Arizona	277
92	Calif-San Diego	275
93	Hawaii	271
94	Bowman Gray	270
95	New Mexico	265
96	Brown	239
97	Connecticut	226
98	Ohio at Toledo	199
99	North Dakota	172
100	LSU-Shreveport	168
101	Missouri-Kansas	161
102	Dartmouth	159
103	South Alabama	153
104	Massachusetts	152
105	Texas-Houston	148
106	South Florida	145
107	Texas Tech	131
108	South Dakota	128
108	Southern Illinois	128
110	Mayo	120
111	SUNY-Stonybrook	117
112	Nevada	96
113	Minnesota-Deluth	59
114	Eastern Virginia	57

* (Source: AAMC's Institutional Profile System)

APPENDIX G

STUDENT INDEBTEDNESS AND MEDICAL SCHOOL CHARACTERISTICS, 1974-75

APPENDIX G

Student Indebtedness and Medical School Characteristics, 1974-75

Table G-1 summarizes the relationships between (a) the average student indebtedness anticipated upon graduation from medical school, and (b) the five medical school characteristics considered in the body of this report.

Of these five other characteristics, "control of medical school" (column 5) and "tuition of medical school" (column 6) appear to be most closely related to student indebtedness. For example, mean anticipated indebtedness decreased steadily from a high of $9,437 for students in the "most private" (or first-quartile) schools to a low of $6,302 for students in the "most public" (or fourth-quartile) schools. Similarly, indebtedness decreased steadily from $9,876 for those schools with the highest tuitions (first quartile) to $6,200 for those schools with the lowest tuitions (fourth quartile).

Table G-1

Average Student Anticipated Indebtedness by Medical School Characteristics, 1974-75*

Grouping by Medical School Characteristics† (1)	ANTICIPATED INDEBTEDNESS UPON GRADUATION				
	Size of Medical School (2)	Research Orientation of Medical School (3)	Funding Pattern of Medical School (4)	Control of Medical School (5)	Tuition of Medical School (6)
Total	$7,745	$7,745	$7,745	$7,745	$7,745
1st Quartile	8,598	7,544	8,488	9,437	9,876
2nd Quartile	8,169	8,024	7,333	8,346	7,951
3rd Quartile	6,624	7,742	6,984	6,780	6,618
4th Quartile	7,754	7,688	8,329	6,302	6,200

* Table derived by calculating mean indebtedness for the students within each quartile grouping.

† The set of schools within each quartile varies across the five medical school characteristics.

For both "size of medical school" (column 2) and "funding pattern of medical school" (column 4), there was a less clear relationship with student anticipated indebtedness. For each of these school characteristics, mean debt decreased steadily from the first to the third quartile. However, the mean indebtedness of students in the third quartile on these variables was lower than that of students in the fourth quartile. In other words, indebtedness was generally but not consistantly higher for those students (a) attending larger schools, and (b) attending schools that were relatively more dependent on endowments/gifts and research grants.

Finally, as shown in column 3, there appeared to be no relationship between anticipated student indebtedness and "research orientation of medical school" (as measured by the proportion of budget spent on research). Mean anticipated indebtedness was very similar for students in all four research orientation quartiles, ranging from a low of $7,544 for those in the first quartile to a high of $8,024 for those in the second quartile.